

CLAIMS

We claim:

1. A method for controlling use of hardware and software, the method comprising:
  - identifying a parameter having a prototype operation range and a production operation range, wherein a portion the prototype operation range is outside of the production operation range;
  - limiting operation of the hardware and software to the portion of the prototype operation range outside of the production operation range.
2. The method of Claim 1 wherein the prototype operation range and production operation range overlap.
3. The method of Claim 2 wherein the parameter is a hardware parameter.
4. The method of Claim 3 wherein the hardware parameter is a data format.
5. The method of Claim 3 wherein the hardware parameter is the number of pin contacts between the hardware and an external device.
- 15 6. The method of Claim 3 wherein the hardware parameter is a signal limit.
7. The method of Claim 6 wherein the signal limit is a limit on the number of input signals allowed into the hardware by the software.
8. The method of Claim 6 wherein the signal limit is a limit on the number of output signals allowed out of the hardware by the software.
- 20 9. The method of Claim 8 wherein the output signals are signals used to provide the status of either the hardware or the software.

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10. The method of Claim 3 wherein the parameter is limited by preselected fabrication of the hardware.

11. The method of Claim 3 wherein the parameter is limited by preselected augmentation of the hardware.

5 12. The method of Claim 2 wherein the parameter is a software parameter.

13. The method of Claim 12 wherein the parameter is a time limit on run time during which the software will permit operation of the hardware.

14. The method of Claim 13 further comprising the step of disabling the hardware after the time limit has been attained.

10 15. The method of Claim 14 wherein the step of disabling the hardware comprises a reset of a register in the hardware.

16. The method of Claim 14 wherein the step of disabling the hardware comprises a global tri-state of the hardware IO.

17. The method of Claim 14 wherein disabling the hardware comprises a random failure of the hardware.

15 18. The method of Claim 14 wherein an internal clock of the hardware is used to measure the run time of the hardware.

19. The method of Claim 2 wherein the step of identifying a parameter comprises the step of identifying multiple parameters in accordance with the identification step and further wherein the

20 step of limiting operation of the hardware and software comprises the step of limiting operation of the hardware and software with regard to each identified parameter in accordance with the

limitation step.

20. A hardware device implementing the method of Claim 2.
21. The hardware device of Claim 20 wherein the device is a programmable logic device.
22. A method for controlling use of hardware that uses software, the method comprising:
  - 5 identifying a run time limit that is (i) long enough to permit testing of the hardware in a prototype manner and (ii) too short for use of the hardware in a production manner;
  - counting the time elapsed during operation of the hardware;
  - disabling the hardware after the run time limit is reached.
23. The method of Claim 22 wherein the counting step is performed by an internal clock within the hardware.
24. The method of Claim 22 wherein disabling the hardware comprises a reset of a register in the hardware.
25. The method of Claim 22 wherein disabling the hardware comprises a global tri-state of the hardware IO.
- 15 26. The method of Claim 22 wherein disabling the hardware comprises a random failure of the hardware.
27. The method of Claim 22 wherein disabling is selected from a reset of a register in the hardware, a global tri-state of the IO of the hardware, and a random failure within the hardware.
28. A hardware device implementing the method of Claim 22.
- 20 29. The hardware device of Claim 28 wherein the device is a programmable logic device.
30. A counter in a hardware device, said counter comprising:

a clock;

a memory containing a run time limit measured by the clock, the run time limit being (i) long enough to permit testing of the hardware in a prototype manner and (ii) too short for use of the hardware in a production manner;

5 means for disabling the hardware device after the run time limit is reached by the clock.

31. The counter of Claim 30 wherein disabling the hardware device is selected from the following:

a reset of a register in the hardware,

a global tri-state of the IO of the hardware, and

a random failure within the hardware.

32. A hardware device comprising the counter of Claim 30.

33. The hardware device of Claim 32 wherein the hardware device is a programmable logic device.

34. A computer program product for controlling use of hardware and software, the computer program product comprising:

computer code for identifying a parameter having a prototype operation range and a production operation range, wherein a portion the prototype operation range is outside of the production operation range;

computer code for limiting operation of the hardware and software to the portion of the 20 prototype operation range outside of the production operation range; and  
a computer readable medium that stores the computer codes.

35. The computer program product of Claim 34 wherein the parameter is a hardware parameter.

36. The computer program product of Claim 35 wherein the hardware parameter is a data format.

5 37. The computer program product of Claim 35 wherein the hardware parameter is the number of pin contacts between the hardware and an external device.

38. The computer program product of Claim 35 wherein the hardware parameter is a signal limit.

10 39. The computer program product of Claim 38 wherein the signal limit is a limit on the number of input signals allowed into the hardware by the software.

40. The computer program product of Claim 38 wherein the signal limit is a limit on the number of output signals allowed out of the hardware by the software.

15 41. The computer program product of Claim 40 wherein the output signals are signals used to provide the status of either the hardware or the software.

15 42. The computer program product of Claim 35 wherein the parameter is limited by preselected fabrication of the hardware.

43. The computer program product of Claim 35 wherein the parameter is limited by preselected augmentation of the hardware.

44. The computer program product of Claim 34 wherein the parameter is a software parameter.

20 45. The computer program product of Claim 44 wherein the parameter is a time limit on run

time during which the software will permit operation of the hardware.

46. The computer program product of Claim 45 further comprising computer code for disabling the hardware after the time limit has been attained.

47. The computer program product of Claim 46 wherein disabling the hardware comprises a 5 reset of a register in the hardware.

48. The computer program product of Claim 46 wherein disabling the hardware comprises a global tri-state of the hardware IO.

49. The computer program product of Claim 46 wherein disabling the hardware comprises a 10 random failure of the hardware.

50. The computer program product of Claim 46 wherein an internal clock of the hardware is 15 used to measure the run time of the hardware.

51. The computer program product of Claim 34 wherein the computer code for identifying a parameter comprises computer code for identifying multiple parameters in accordance with the computer code for identifying the parameter; and further wherein the computer code for limiting 15 operation of the hardware and software comprises computer code for limiting operation of the hardware and software with regard to each identified parameter in accordance with the operation limiting computer code.

52. A hardware device incorporating the computer program product of Claim 34.

53. The hardware device of Claim 52 wherein the device is a programmable logic device.

20 54. A method for enabling controlled operation of hardware, the method comprising: identifying an operational parameter having a first operation range and a second operation

range, wherein a portion of the first operation range is outside of the second operation range; limiting operation of the hardware to the portion of the first operation range outside of the second operation range.

55. The method of Claim 54 wherein the first operation range and the second operation range  
5 overlap.

56. The method of Claim 54 wherein the first operation range and the second operation range are mutually exclusive.

57. The method of Claim 54 wherein the operational parameter is time and further wherein  
the first operation range is a prototype testing time range and the second operation range is a  
10 production time range.

58. The method of Claim 57 wherein the prototype testing time range has a maximum and  
further wherein the production time range has no maximum.

59. The method of Claim 54 wherein the first operation range is a range of timed operation  
having a maximum time limit and wherein the second operation range is a range of timed  
15 operation extending beyond the maximum time limit.

60. The method of Claim 59 wherein the second operation range has no maximum time limit.